Outfall 002A – TCE Exceedance in March 2018 and Plan of Action

The TCE concentration in the sample from outfall 002A (groundwater infiltration) was 17 ppb this month, compared to a permit limit of 5 ppb.

We believe this exceedance was due to the following:

- Full capture of dry weather flow was not being achieved at the time of sample collection at a recovery flow rate of 41.0 gallons per minute (gpm).
    - Note: Sustained dry weather flow in excess of 40 gpm has been observed in the month of March and is attributed to the seasonally high groundwater table resulting in abnormally high rates of groundwater infiltration into the storm sewer system.
    - Note: Operating the dry weather flow capture system at a flow rate greater than 40 gpm significantly increases the loading on the primary system bag filters (post-air stripper). This in turn reduces the amount of other influent sources (i.e. overburden and/or bedrock) that can be recovered and increases the risk of total system shutdown due to fouling from organics (leaves, twigs, etc.) and bacterial iron sludge.

The reasons for this conclusion are as follows:

1. Flow was observed going over the baffle and the overflow switch, installed at the top of the baffle, was engaged.
2. The estimated flow going over the baffle at the time of sample collection was approximately 6.7 gpm. This flow was determined by taking the difference of the measured flow at 002A (88 gpm) at the time of sample collection (3/28/18 at 7:35 AM) and subtracting the observed effluent (002B) flow (81.3 gpm) at that time.
3. Combining the estimated flow going over the baffle, 6.7 gpm, with the measured dry weather recovery flow rate of 41.0 gpm yields a total dry weather flow at the time of sample collection of approximately 47.7 gpm.

The following corrective action(s) is (are) being evaluated for possible implementation this year:

1. Continue to operate the dry weather catchment system at a flow rate between 40 and 50 gpm until dry weather flow is fully captured.
2. Modify GWTP treatment train to include pre-filtration of dry-weather flow from storm sewer before transfer to influent equalization tank for treatment, with other influent sources, and discharge of clean effluent. All auxiliary equipment will be designed to handle at least 50 gpm and the control logic will allow for dry-weather flow catchment system to operate independently of the rest of the GWTP treatment train.
    a. This is expected to:
        i. Allow for the overburden recovery rate to be increased, thus reducing the overburden infiltration contribution to dry weather flow, and the bedrock well to remain online, while sustaining dry weather catchment system recovery between 40 and 50 gpm; and

ii. Reduce the likelihood of total system shutdowns due to increased loading on the primary system bag filters (post-air stripper).